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ABSTRACT

Several recently developed measurement instruments, the General Aptitude Test Battery (GATB), the Comparative Guidance and Placement Program (CGP), the Kuder Occupational Interest Survey (DD), the Ohio Vocational Interest Survey (OVIS), and the Gordon Occupational Check List, are considered in connection with guidance testing for occupational placement. (AG)

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# New Tools for Guidance in Business Education*

by

Benjamin Shimberg, Ph.D.
Senior Program Director
Vocational-Technical Education Projects
Educational Testing Service
Princeton, New Jersey

The main purpose of tests and inventories in the guidance situation should be to assist the student to make intelligent decisions regarding his future educational and vocational plans. To make such decisions, he needs dependable information about his abilities, interests, and values. He also needs to know how such information relates to various opportunities open to him in both the educational sphere and in the world of work.

Ideally, occupational exploration and career development should begin during the elementary grades and continue until the individual has made a well-informed and rational choice and has tested his decision experientially. However, in practice few students are ever given the opportunity to carry on career exploration in a systematic way, to develop decision-making skills, or to "try on" various jobs for size. Moreover, their freedom of choice--especially with respect to business, technical, and blue collar occupations--is frequently circumscribed by the deep-seated prejudices against such occupations held by members of the educational

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community and by society at large. While counselors subscribe to the dignity and worth of all types of work, many of them obviously believe that all able students should be encouraged to pursue the academic (college preparatory) curriculum and that only the less able student should go into the business or vocational-technical curriculum. This attitude is reinforced by the aspirations that many parents hold for their children. The four-year college degree is still viewed by many parents as the touchstone of social and monetary success. Thus, the counselor who suggests to a student that he explore vocational programs may find angry parents on his doorstep acting as if they had been insulted personally. It is small wonder that under these circumstances many counselors find it easier and safer to direct most students toward college preparatory programs and to soft-pedal occupational programs except where the student is clearly unsuited for an academic career.

Interest inventories and ability tests can be helpful tools in educational and vocational guidance, but they will not solve the problem discussed above unless a climate conducive to career development has been fostered and there is a readiness on the part of students, parents, and counselors to support exploration that leads to greater self-understanding and to a greater awareness of how one may find satisfaction and personal fulfillment in various kinds of work.

Traditionally, the ability tests used in elementary and secondary schools have focused on the verbal and quantitative skills of students. Such tests have long been used for guidance and placement because they have been shown to be closely related to academic success. Other types of abilities--such as mechanical, clerical, spatial--have often been introduced to provide supplementary information to the teacher and/or counselor. However, since the relationships between ability scores on these factors and success in various vocational courses is not as well established as is the relationship between academic ability tests and school grades, such tests (mechanical, clerical, spatial) have tended to have relatively little influence in decision making.

It is not possible in this brief overview to discuss in detail the many different aptitude batteries that might be considered in connection with guidance testing for business occupations. Rather than repeat material that is readily accessible in textbooks and other sources, this writer would like to call attention to several recent developments that may not be widely known yet which may be of considerable interest.

The use of the General Aptitude Test Battery (GATB) in educational-vocational counseling by the Ohio State Department of Education appears especially noteworthy. The GATB

has been used for many years by state employment services all over the country for guidance and job placement of adults. Only recently has it begun to play a significant role in guidance at the secondary and post secondary level.

The GATB consists of twelve tests. Eight are of the paper-and-pencil variety: Name Comparison, Arithmetic Computation, Three Dimensional Space, Vocabulary, Tool Matching, Arithmetic Reasoning, Form Matching, and Mark-making. Four involve performance: placing and turning pegs and assembling and disassembling washers. On the basis of the test results, nine aptitude scores are obtained: 1) General Learning Ability, 2) Verbal Aptitude, 3) Numerical Aptitude, 4) Spatial Aptitude, 5) Form Perception, 6) Clerical Perception, 7) Motor Coordination, 8) Figure Dexterity, and 9) Manual Dexterity.

In its traditional use for employment and placement, the aptitude scores of an individual have usually been compared with aptitude score configurations for various occupational groups to determine whether or not the individual had the minimum aptitude required for success in that cluster of occupations. In order to facilitate the guidance use of GATB data, the Ohio Program focused on average aptitude score patterns for various worker trait groups found in Volume II of the Dictionary of Occupational Titles. High school counselors are trained by the Division of Guidance

and Testing to interpret and use GATB data for guidance purposes, and the test is administered in schools by counselors rather than by state employment service personnel. A ninety-two page School Counselors Guide for the GATB provides the counselor with interpretive materials specifically designed for this purpose.

Perhaps the most interesting and most useful feature of the Ohio Program is a computer printout for each student showing his aptitude scores on both the DOT Scale and a Stanine Scale. The printout lists all of the Worker Trait Groups (WTG) in the Dictionary of Occupational Titles which call for aptitudes possessed by the counselee at the appropriate level. It also lists Worker Trait Groups requiring aptitudes at higher levels than those possessed by the counselee. Finally, it lists those Worker Trait Groups for which the counselee is "over-qualified."

In a sample printout that was made available to this writer, the student in question possessed the aptitudes that would qualify him for three Worker Trait Groups in the business-related area (training, supervising, and gathering). He was also qualified for twelve WTG in the clerical field: supervisory, expediting, gathering, teller, cashiering, inspecting, machine, filing, computing, sorting, typing, and switchboard.

The full significance of the foregoing list may be appreciated only in conjunction with the listing of Worker Trait Groups for which the student fell below the average aptitude levels. In the business area, he did not meet the requirements for WTG's involving administration, negotiating, managerial, consultative, interviewing, accounting, documenting, or corresponding. In the clerical area, his aptitudes fell short of those required for secretarial, corresponding, stenographic, and recording. By reviewing both sets of WTGs the counselor should be able to define operationally the type and level of clerical work for which the student is best suited.

This writer would urge other states to explore the feasibility of adapting the Ohio Program to their own secondary schools and community colleges. The data provided by the Ohio Program far exceeds that available from most in-school testing programs. The link between test data and the Dictionary of Occupational Titles further enhances its value as a counseling tool.

One serious gap in most guidance-testing programs (including the Ohio Program) is the lack of dependable data regarding the relationship of aptitude test scores and success in individual courses of study or specific training programs. While most publishers of aptitude tests provide validity data for groups which have completed training,

it is difficult to use such information to help a specific student make a career choice. A student faced with a decision about course selection is not really concerned that "on the average" students in his score range have been successful in some training program (say, data processing) in institutions all over the country. What he is interested in finding out is "What are my chances of success if I enroll in the data processing program at the local community college." The program at his college may be unusually difficult, or inordinately easy. It is for this reason that local expectancy tables are extremely important for meaningful guidance and decision making.

The Comparative Guidance and Placement Program (CGP) of the College Entrance Examination Board (P. O. Box 592, Princeton, N. J.) was designed to assist institutions (especially two-year post secondary community colleges) in their efforts to help students make sound educational career decisions. The test battery was not designed to conform to any specific course content or curriculum, but rather to measure skills that students should have in order to perform successfully in a variety of academic and technical programs. Most of the battery is devoted to operational instruments. In addition to such traditional measures as vocabulary, sentences, and general and advanced mathematics, there are three nontraditional instruments in the battery on which

scores are reported. A portion of the battery is devoted to strictly experimental instruments that may be added to future batteries if they prove worthwhile. About four hours of testing is required to complete both the operational and the experimental parts; however, about 40 minutes of testing time can be saved by having students complete the biographical inventory and the Comparative Interest Index on their own time. The Interest Index yields scores on eleven scales: Biology, Health, Fine Arts, Mathematics, Social Science, Secretarial, Physical Sciences, Music, Engineering Technology, Home Economics, and Business.

Space limitations preclude a more detailed discussion of the CGP Program so only one aspect will be singled out for discussion. In reporting test results back to an institution, the CGP Program is able to make performance and placement forecasts. These are predictive statements indicating probable performance in selected curriculums and courses within a given institution. The statements are based on students' scores on the CGP battery <u>in relation to past achievement of other students in the same curriculum and course</u>. Probable performance is given in three categories: above average, average, and below average. These general categories are used instead of grade-point average to avoid making too fine a distinction between two predictions that may not be statistically different.

All performance forecasts are handled by the College Board's Central Prediction Service. When test results from an institution are fed into the computer, a check is made to determine whether the data are adequate for use in making local forecasts. If so, the local forecasts are prepared, taking into account the grading system in use at that school. Otherwise, a general prediction is made. These general predictions do not take account of the local grading system.

At the present time performance forecasts are available for business curriculum characterized as "transfer" or as "occupational-technical." The former applies to students who plan to pursue a four-year program leading to a BA or BS degree. The latter refers to students in two-year programs who plan to earn an AA or AS degree. No local or general forecasts are currently available for students in programs characterized as "occupational-vocational." These are one-year terminal programs which present the student with a certificate upon completion. It is anticipated that forecasts will be available for the "occupational-vocational" programs as the number of participating institutions increases.

Figure I illustrates the format of the CGP Performance forecast. Where numbers appear it means that the institution has completed validity studies for those programs and chances of success are stated as chances in ten. The asterisks indicate that no local validity data are available and that

the predictors are based on data from all institutions surveyed by the program. Three asterisks (***) means "very likely"; ** means "likely" and * means "unlikely."

FIGURE I

Your chances in ten (10) of performing at the above average, average, and below average levels in the program areas listed below.
Asterisks (*) mean that the forecast is based on students in general since specific information about students at your school is not yet available.
***VERY LIKELY **LIKELY *UNLIKELY

| TYPE OF PROGRAM | | TRANSFER | | | | | OCCUPATIONAL-TECHNICAL | | | | OCCUPATIONAL-VOCATIONAL | | | DEVELOPMENTAL | OTHER (IF NOT CLEAR) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PERFORMANCE LEVELS | PROGRAM AREA | SCIENCE AND AGRICULTURE | BUSINESS | LIBERAL ARTS | EDUCATION | FINE ARTS | SCIENCE, TRADE & IND. TECH., AGRICULTURE | BUSINESS | HEALTH | PUBLIC SERVICE | TRADE & IND. TECH., SCIENCE, AGRICULTURE | BUSINESS | HEALTH | | |
| | ABOVE AVERAGE | * | 05 | 03 | 03 | | * | 07 | * | | ** | | | ** | |
| | AVERAGE | ** | 03 | 03 | 04 | | ** | 02 | *** | | *** | | | ** | |
| | BELOW AVERAGE | *** | 02 | 04 | 03 | | *** | 01 | ** | | * | | | * | |

If chances in 10 appear in the last column, they refer to the following program:

(OVER) 123

In the illustration the general prediction suggests that the student would very likely earn below average grades in service, trade, industrial technical, and agricultural programs in the occupational-technical area, but he has seven chances in ten of earning above average grades in the business program. One may have greater confidence in the latter statement than in the former because it is based on local validity data while the former is based on pooled data from a number of schools.

The fact that the Performance Forecast indicates that an individual can be equally successful in several different fields may help to narrow the range of choices within which

the decision-making process operates but it is clearly no substitute for the process itself. A student confronted with such choices needs to consider his interests and values and the importance he attaches to a particular career goal. The importance of motivation should not be underestimated. Everyone is familiar with individuals who managed to succeed in the face of unfavorable predictions. However, for every individual who upsets the odds, there are dozens who fall by the wayside. Unfortunately, no dependable measures of motivation are available. Hence, we must continue to rely on interests and past performance as indirect indicators of motivation.

Over the past several decades, the two most widely used interest measures have been the Strong Vocational Interest Blank and the Kuder Preference Record. The latter has recently been restandardized on groups of individuals actually engaged in various occupations and published as the Kuder Occupational Interest Survey (DD). There are now 79 occupational scales and 20 college-major scales for men, and 56 occupational scales and 25 college-major scales for women. The occupational scale for women includes such business-oriented jobs as accountant, bank clerk, bookkeeper, office clerk, secretary, and stenographer. Although Art Education, Music Education, and Home Economics Education are among the college majors listed, Business Education is not included.

The business-oriented occupational scales for men include certified public accountant, banker, bookkeeper, buyer, insurance agent, personnel manager, real estate agent, statistician. The college major scales for men include: Business Accounting and Finance; Business and Marketing; and Business Management.

The items used by Kuder are the same 100 forced-choice triads that he has employed in Preference Record. However, the new form (DD) is empirically based--that is, the score patterns were derived by testing individuals actually engaged in the 135 occupations for which scales are provided. The scores derived from the new inventory show the degree to which the expressed interests of an individual correspond to the preference characteristics of each criterion group of the same sex. The scoring is so complex that it must be done by the publisher, Science Research Associates, using its own high-speed optical scanning equipment and computers. The report to students gives results in both numerical and in profile form.

Although this writer has not had an opportunity to use the Kuder (DD) in a guidance situation, he recently filled out the blank and had his scores reported. He was impressed with how accurately the profile report reflected his own interests and educational background. This represents a validity "of sorts"--even though the "N" is one. The new

form seems to be vastly superior to earlier versions of the Kuder and merits consideration as a potentially useful guidance tool.

The Ohio Vocational Interest Survey (OVIS), published by Harcourt, Brace, Javanovich, is another new instrument which should be of interest to counselors and business educators. OVIS makes use of the Data-People-Things approach employed by the Dictionary of Occupational Titles. The authors have developed a cubistic model of vocational interests which appears to be a helpful device for facilitating vocational exploration.

OVIS combines an interest inventory and a Student Information Questionnaire to provide the student and his counselor not only with interest scores, but also with background information for interpreting these scores. The interest inventory consists of 280 job activity items. Students respond to each item in terms of "Like very much," "Like," "Indifferent to," "Dislike," and "Dislike very much." They are instructed to consider each activity as something that would be done "as part of a full-time job."

The reporting system shows the strength of each student's interest in 24 different fields presented in rank order. The fields related to business are: clerical work, customer services, training, numerical, appraisal, promotion

and communications, and management and supervision. In addition to reporting a scale score and percentile rank for each of the 24 fields, a profile is also provided. As an added feature, a "Scale Clarity Index" is printed alongside each scale. "H" signifies that the individual was "highly consistent" in the way he responded to the items on that scale. An "F" means that he was "fairly consistent." An "I" means he was "inconsistent."

A great deal of careful research has gone into the development of OVIS, especially the effort to relate the scale scores to the DOT. There is good reason to believe the guidance workers will find it a useful tool for vocational exploration.

Still another interest inventory which appears to be relevant to the field of business education is the Gordon Occupational Check List, also published by Harcourt, Brace, Javanovich. This check list was designed specifically for students who do not plan to go to college. It consists of 240 activities organized into five general interest categories: Business, Outdoor, Arts, Technology, and Service. The items are organized into thirty internally related clusters which have certain significant characteristics in common. The clustering serves to facilitate interpretation. The author has drawn on the work of Dr. Ann Roe in classifying items along two dimensions. The first dimension

focuses on the primary activities of the occupation--that is, the actual nature of the work done. The second dimension reflects the degree of personal autonomy and the level of skill and training required in an occupation.

The business field is represented by 48 items--a far greater number than is customarily found in such inventories. The range of activities from cluster to cluster shows a steady progression from the more routine jobs with relatively little autonomy to higher level jobs which demand considerable skill and responsibility. One example drawn from each cluster will illustrate this progression: "sort and deliver mail, messages, and packages" is found in cluster 1; "read and answer customers' letters" is found in cluster 2; "handle deposits and withdrawals in a bank" (cluster 3); "interview people who apply for jobs" (cluster 4); "sell insurance, securities or real estate" (cluster 5); "buy and price merchandise for a retail store" (cluster 6).

Unlike the other instruments discussed above, the Gordon check list does not attempt to provide any sort of scaled score. It was intended that the actual responses would serve as the primary data for purposes of interpretation. Space is provided for testing the total number of responses in each area that were underlined (indicating some interest) and the number that were also circled (indicating a high degree of interest). However, the author

cautions that the sum of the responses in a given area should not be interpreted in the same manner as scale scores in a conventional interest inventory.

## SUMMARY

This brief review of some recent developments in the field of testing has called attention to two innovative programs that go beyond the usual--and rather sterile--practice of interpreting test data in terms of national norms. Both programs provide clues regarding the likelihood of success in a given type of work or in a specific course of study.

Three interest inventories are described in terms of special features that should enhance their usefulness to those who seek to aid young people in their career explorations.

The writer is not aware of any dependable techniques for measuring the attitudes and values of young adults or for assessing their motivation for success in various fields of endeavor. These remain the frontier areas of the guidance and testing field. Perhaps the next Yearbook of this Association will be able to report some signs of progress.